Cisco Systems

Getting Started Guide

Catalyst 2950 Switch Getting Started Guide

INCLUDING LICENSE AND WARRANTY

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1 About this Guide

This guide provides instructions on how to use Express Setup to initially configure your Catalyst switch. Also covered are switch management options, basic rack-mounting procedures, port and module connections, power connection procedures for both AC- and DC-powered switches, and troubleshooting help.

For additional installation and configuration information for Long-Reach Ethernet (LRE) switches and for all switch models, refer to the Catalyst 2950 documentation on Cisco.com. For system requirements, important notes, limitations, open and resolved bugs, and last-minute documentation updates, see the release notes, also on Cisco.com.

When using the online publications, refer to the documents that match the Cisco IOS software version running on the switch. The software version is on the Cisco IOS label on the switch rear panel.

You can order printed copies of the manuals from the Cisco.com sites and from the telephone numbers listed in the "Obtaining Documentation" section on page 21.

For translations of the warnings that appear in this publication, refer to the *Regulatory Compliance and Safety Information for the Catalyst 2950 Switch* that accompanies this guide.

2 Taking Out What You Need

Follow these steps:

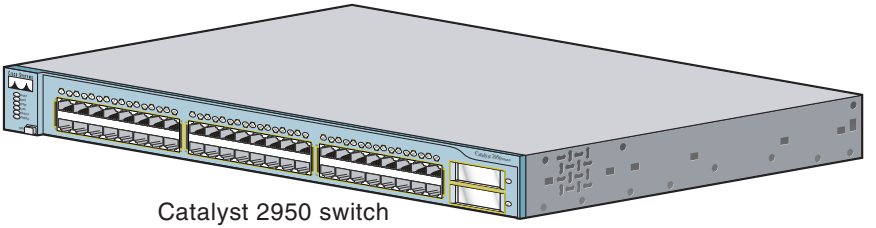
1. Unpack and remove the switch and the accessory kit from the shipping box.
2. Return the packing material to the shipping container, and save it for future use.
3. Verify that you have received the items shown on page 3. If any item is missing or damaged, contact your Cisco representative or reseller for instructions. Some switch models might include additional items that are not shown on page 3.

Equipment That You Supply to Run Express Setup

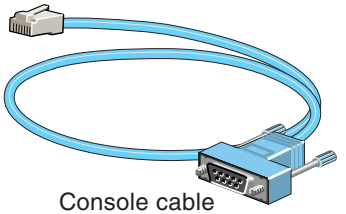
You need to supply this equipment to run Express Setup:

- PC
- Ethernet (Category 5) straight-through cable (as shown)

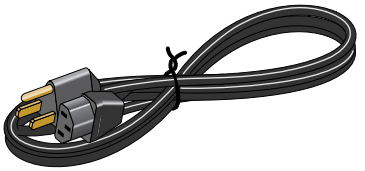
Shipping Box Contents



Catalyst 2950 switch

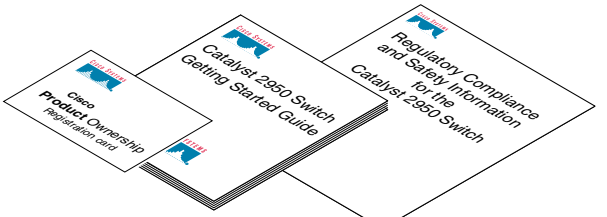


Console cable

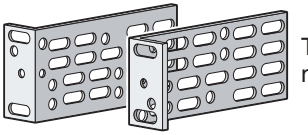


AC power cord (AC-powered switches only)

Four rubber mounting feet


Cisco Product Ownership Registration Card
Catalyst 2950 Switch Getting Started Guide
Regulatory Compliance and Safety Information for the Catalyst 2950 Switch

Documentation

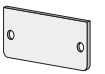


Two 19-inch mounting brackets

Four number-12 Phillips machine screws

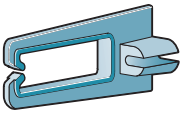
Four number-8 Phillips truss-head screws

Six number-8 Phillips flat-head screws



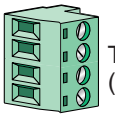
Connector cover for redundant power system (RPS)

Two number-4 pan-head screws

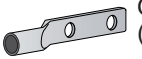


Cable guide

One black Phillips machine screw



Terminal block (DC-powered switches only)



Ground lug (DC-powered switches only)

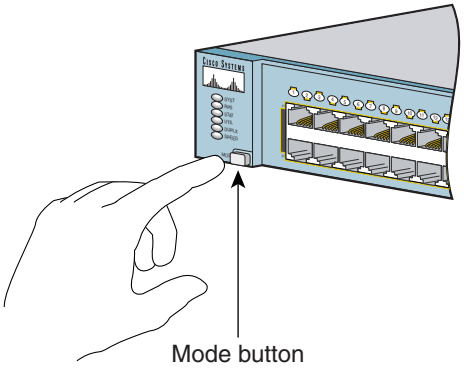
Two number-10-32 screws

3 Running Express Setup

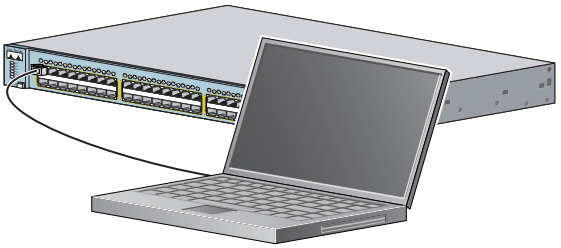
When you first set up the switch, you should use Express Setup to enter the initial IP information. This enables the switch to connect to local routers and the Internet. You can then access the switch through the IP address for further configuration.

To run Express Setup:

Step 1	Verify that no devices are connected to the switch, because during Express Setup, the switch acts as a DHCP server. If your PC has a static IP address, before you begin you should change your PC settings to temporarily use DHCP.
Step 2	Connect the AC power cord to the switch and to a grounded AC outlet. The power-on self-test (POST) begins. During POST, the LEDs blink while a series of tests verify that the switch functions properly. For a DC-powered switch, see the "Connecting to DC Power" section on page 16 for wiring instructions.
Step 3	Wait for the switch to complete POST. It might take several minutes for the switch to complete POST.
Step 4	Verify that POST has completed by confirming that the SYST and STAT LEDs are green.
Step 5	Press and hold the Mode button for 3 seconds. When all of the LEDs above the Mode button turn green, release the Mode button. If the LEDs above the Mode button begin to blink after you press the button, release it. Blinking LEDs mean that the switch has already been configured and cannot go into Express Setup mode. For more information, see the "Resetting the Switch" section on page 20.
Step 6	Verify that the switch is in Express Setup mode by confirming that all LEDs above the Mode button are green. (The RPS LED remains off on some switch models.)



Step 7 Connect a straight-through Category 5 Ethernet cable (not provided) to any 10/100 or 10/100/1000 Ethernet port on the switch front panel and to the Ethernet port on the PC.



DHCP-enabled PC

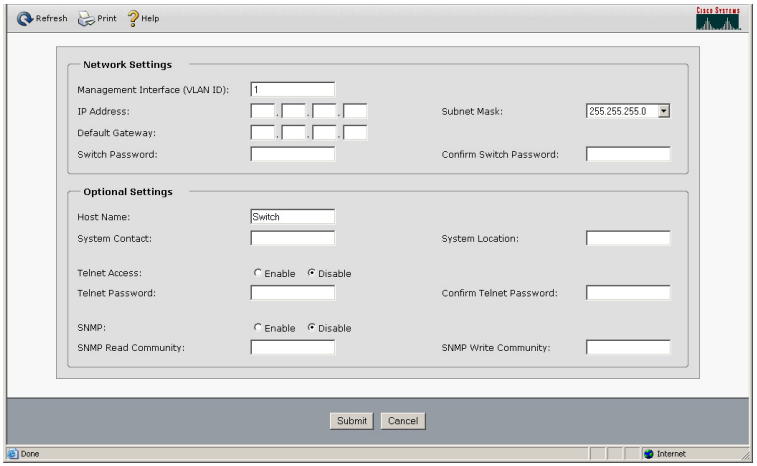
Step 8 Verify that the LEDs on both Ethernet ports are green.

Step 9 Wait 30 seconds.

Step 10 Launch a web browser on your PC. Enter the IP address **10.0.0.1** in the web browser, and press **Enter**.

Cisco Systems, Inc - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Back Search Favorites
Address 10.0.0.1

Step 11 The Express Setup page appears. If it does not appear, see the "In Case of Difficulty" section on page 19 for help.



Step 12 Enter this information in the **Network Settings** fields:

- In the **Management Interface (VLAN ID)** field, the default is **1**. Enter a new VLAN ID only if you want to change the management interface through which you manage the switch and to which you assign IP information. The VLAN ID range is 1 to 1001.
- In the **IP Address** field, enter the IP address of the switch. In the **IP Subnet Mask** field, click the drop-down arrow, and select an **IP Subnet Mask**.
- In the **Default Gateway** field, enter the IP address for the default gateway (router).
- Enter your password in the **Switch Password** field. The password can be from 1 to 25 alphanumeric characters, can start with a number, is case sensitive, allows embedded spaces, but does not allow spaces at the beginning or end. In the **Confirm Switch Password** field, enter your password again.

Step 13 (Optional) You can enter the **Optional Settings** information now or enter it later by using the device manager interface:

- In the **Host Name** field, enter a name for the switch. The host name is limited to 31 characters; embedded spaces are not allowed.
- In the **System Contact** field, enter the name of the person responsible for the switch. In the **System Location** field, enter the wiring closet, floor, or building where the switch is located.
- In the **Telnet Access** field, click **Enable** if you are going to use Telnet to manage the switch by using the command-line interface (CLI). If you enable Telnet access, you must enter a Telnet password.
- In the **Telnet Password** field, enter a password. The Telnet password can be from 1 to 25 alphanumeric characters, is case sensitive, allows embedded spaces, but does not allow spaces at the beginning or end. In the **Confirm Telnet Password** field, enter the Telnet password again.
- In the **SNMP** field, click **Enable** to enable Simple Network Management Protocol (SNMP). Enable SNMP only if you plan to manage switches by using CiscoWorks2000 or another SNMP-based network-management system.

  If you enable SNMP, you must enter a community string in the **SNMP Read Community** field, the **SNMP Write Community** field, or both. SNMP community strings authenticate access to MIB objects. Embedded spaces are not allowed in SNMP community strings. When you set the SNMP read community, you can access SNMP information, but cannot modify it. When you set the SNMP write community, you can access and modify SNMP information.

Step 14	Click **Submit** to save your settings, or click **Cancel** to clear your settings. When you click **Submit**, the switch is configured and exits Express Setup mode. The PC displays a warning message and then attempts to connect with the new switch IP address. If you configured the switch with an IP address that is in a different subnet from the PC, connectivity between the PC and the switch is lost.
Step 15	Disconnect the switch from the PC, and install the switch in your production network. See the "Managing the Switch" section on page 7 for information about configuring and managing the switch. If you need to rerun Express Setup, see the "Resetting the Switch" section on page 20.

Refreshing the PC IP Address

After you complete Express Setup, you should refresh the PC IP address.

For a dynamically assigned IP address, disconnect the PC from the switch, and reconnect it to the network. The network DHCP server will assign a new IP address to the PC.

For a statically assigned IP address, change it to the previously configured IP address.

4 Managing the Switch

After completing Express Setup and installing the switch in your network, use the device manager or other management options described in this section for further configuration.

Using the Device Manager

The simplest way to manage the switch is by using the device manager that is in the switch memory. This is an easy-to-use web interface that offers quick configuration and monitoring. You can access the device manager from anywhere in your network through a web browser.

Follow these steps:

1. Launch a web browser on your PC or workstation.
2. Enter the switch IP address in the web browser, and press **Enter**. The device manager page appears.
3. Use the device manager to perform basic switch configuration and monitoring. Refer to the device manager online help for more information.
4. For more advanced configuration, download and run the Cisco Network Assistant described in the next section.

Downloading Cisco Network Assistant

Cisco Network Assistant is a free software program that you download from Cisco.com and run on your PC. Network Assistant offers advanced options for configuring and monitoring multiple devices, including switches, switch clusters, switch stacks, routers, and access points.

Follow these steps:

1. From the device manager page, select **Network Assistant**.
2. Follow the instructions to download the program to your PC.
3. Use the Network Assistant to configure and monitor multiple switches and devices. Refer to the Network Assistant online help and the getting started guide for more information.

Command-Line Interface

You can enter Cisco IOS commands and parameters through the CLI. Access the CLI either by connecting your PC directly to the switch console port or through a Telnet session from a remote PC or workstation.

Follow these steps:

1. Connect the supplied RJ-45-to DB-9 adapter cable to the standard 9-pin serial port on the PC. Connect the other end of the cable to the console port on the switch.
2. Start a terminal-emulation program on the PC.
3. Configure the PC terminal emulation software for 9600 baud, 8 data bits, no parity, 1 stop bit, and no flow control.
4. Use the CLI to enter commands to configure the switch. Refer to the software configuration guide and the command reference for more information.

Other Management Options

You can use SNMP management applications such as CiscoWorks Small Network Management Solution (SNMS) and HP OpenView to configure and manage the switch. You also can manage it from an SNMP-compatible workstation that is running platforms such as HP OpenView or SunNet Manager.

The Cisco IE2100 Series Configuration Registrar is a network management device that works with embedded CNS agents in the switch software. You can use IE2100 to automate initial configurations and configuration updates on the switch.

See the “Accessing Help Online” section on page 20 for a list of supporting documentation.

5 Rack-Mounting

This section covers basic 19-inch rack-mounting and switch port connections. As an example, all the illustrations show the Catalyst 2950G-48-EI switch. You can install and connect other Catalyst 2950 switches as shown in these illustrations. For alternate mounting procedures, such as installing the switch in a 24-inch rack or on a wall, and for additional cabling information, refer to the *Catalyst 2950 Switch Hardware Installation Guide* on Cisco.com.

Equipment That You Supply

You need to supply a number-2 Phillips screwdriver to rack-mount the switch.

Before You Begin

When determining where to install the switch, verify that these guidelines are met:

- Airflow around the switch and through the vents is unrestricted.
- Temperature around the switch does not exceed 113°F (45°C).
- Humidity around the switch does not exceed 85 percent.
- Altitude at the installation site is not greater than 10,000 feet (3,049 m).
- Clearance to the switch front and rear panels meets these conditions:
  - Front-panel LEDs can be easily read.
  - Access to ports is sufficient for unrestricted cabling.
  - AC power cord can reach from the AC power outlet to the connector on the switch front or rear panel.
  - DC source wires can reach from the circuit breaker to the terminal block plug on the switch front or rear panel.
- Cabling is away from sources of electrical noise, such as radios, power lines, and fluorescent lighting fixtures.
- For 10/100 ports and 10/100/1000 ports, the cable length from a switch to an attached device cannot exceed 328 feet (100 meters).
- For 100BASE-FX ports, the cable length from a switch to an attached device cannot exceed 6562 feet (2 kilometers).
- For 1000BASE-SX ports, the cable length from a switch to an attached device cannot exceed 1804 feet (550 meters).
- For cable lengths for small form-factor pluggable (SFP) modules or Gigabit Interface Converter (GBIC) modules, refer to the documentation that shipped with the module.
- For cable lengths for LRE switch ports, refer to the *Catalyst 2950 Switch Hardware Installation Guide*.

Installation Warning Statements

This section includes the basic installation warning statements.

Warning **Installation of the equipment must comply with local and national electrical codes.** Statement 1074

Warning **Only trained and qualified personnel should be allowed to install, replace, or service this equipment.** Statement 148

Warning **To prevent bodily injury when mounting or servicing this unit in a rack, you must take special precautions to ensure that the system remains stable. The following guidelines are provided to ensure your safety:**

- **This unit should be mounted at the bottom of the rack if it is the only unit in the rack.**
- **When mounting this unit in a partially filled rack, load the rack from the bottom to the top with the heaviest component at the bottom of the rack.**
- **If the rack is provided with stabilizing devices, install the stabilizers before mounting or servicing the unit in the rack.** Statement 1006

Warning **To prevent the switch from overheating, do not operate it in an area that exceeds the maximum recommended ambient temperature of 113°F (45°C). To prevent airflow restriction, allow at least 3 inches (7.6 cm) of clearance around the ventilation openings.** Statement 17B

Warning **This equipment is intended to be grounded. Ensure that the host is connected to earth ground during normal use.** Statement 39

Warning **If a redundant power system (RPS) is not connected to the switch, install an RPS connector cover on the back of the switch.** Statement 265

Warning **Class 1 laser product.** Statement 1008

Warning Statements for Connecting to DC Power

These statements apply when connecting a Catalyst 2950G-24-EI-DC or Catalyst 2950ST-24 LRE 997 switch to DC power.

Warning **When installing the unit, always make the ground connection first and disconnect it last.** Statement 42

Warning **Before connecting or disconnecting ground or power wires to the chassis, ensure that power is removed from the DC circuit. To ensure that all power is OFF, locate the circuit breaker on the panel board that services the DC circuit, switch the circuit breaker to the OFF position, and tape the switch handle of the circuit breaker in the OFF position.** Statement 140

Warning **An exposed wire lead from a DC-input power source can conduct harmful levels of electricity. Be sure that no exposed portion of the DC-input power source wire extends from the terminal block plug.** Statement 122

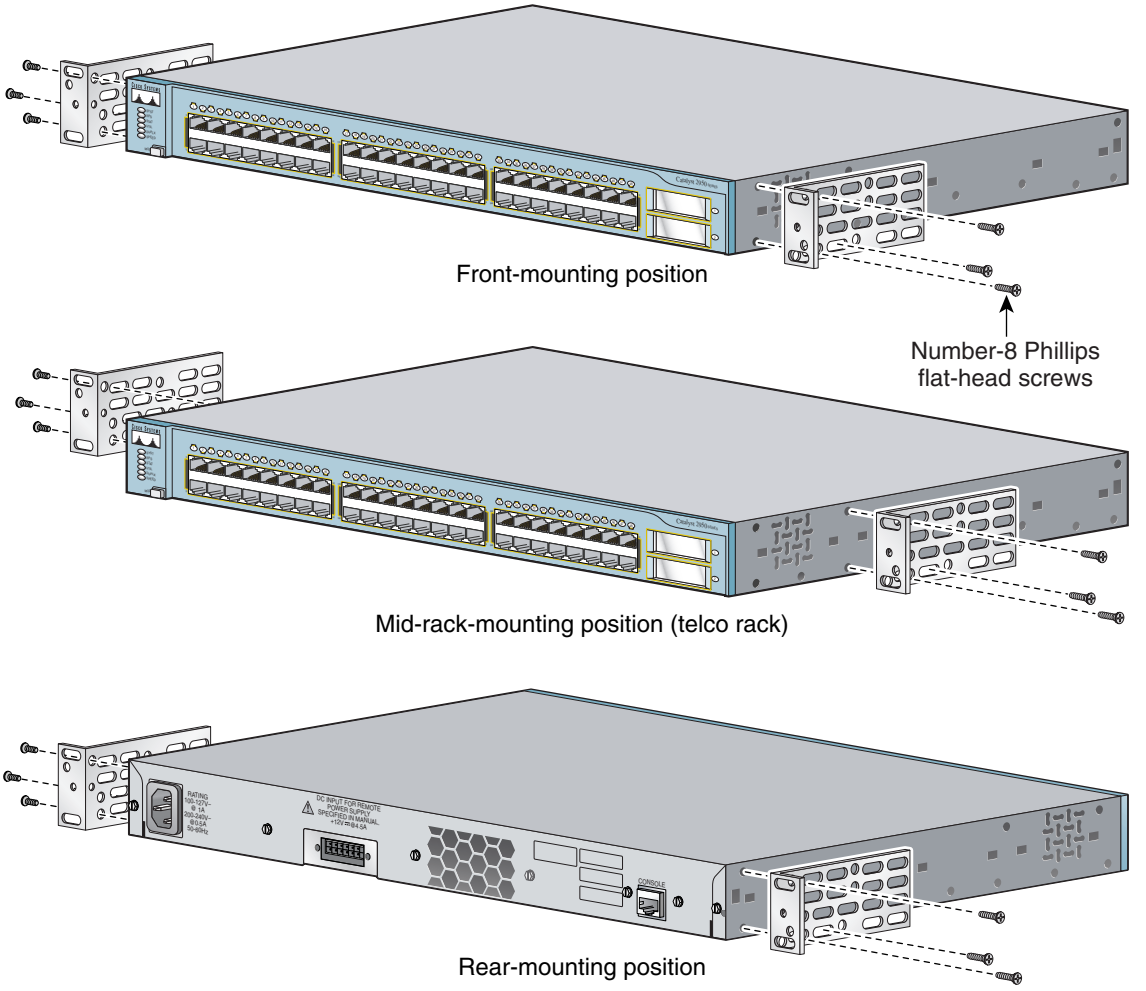
Caution To make sure that the equipment is reliably connected to earth ground, follow the grounding procedure instructions, and use a UL-listed lug suitable for number-6 AWG wire and two number-10-32 ground-lug screws.

Caution The switch must be installed with 5-A branch-circuit protection.

Attaching the Brackets

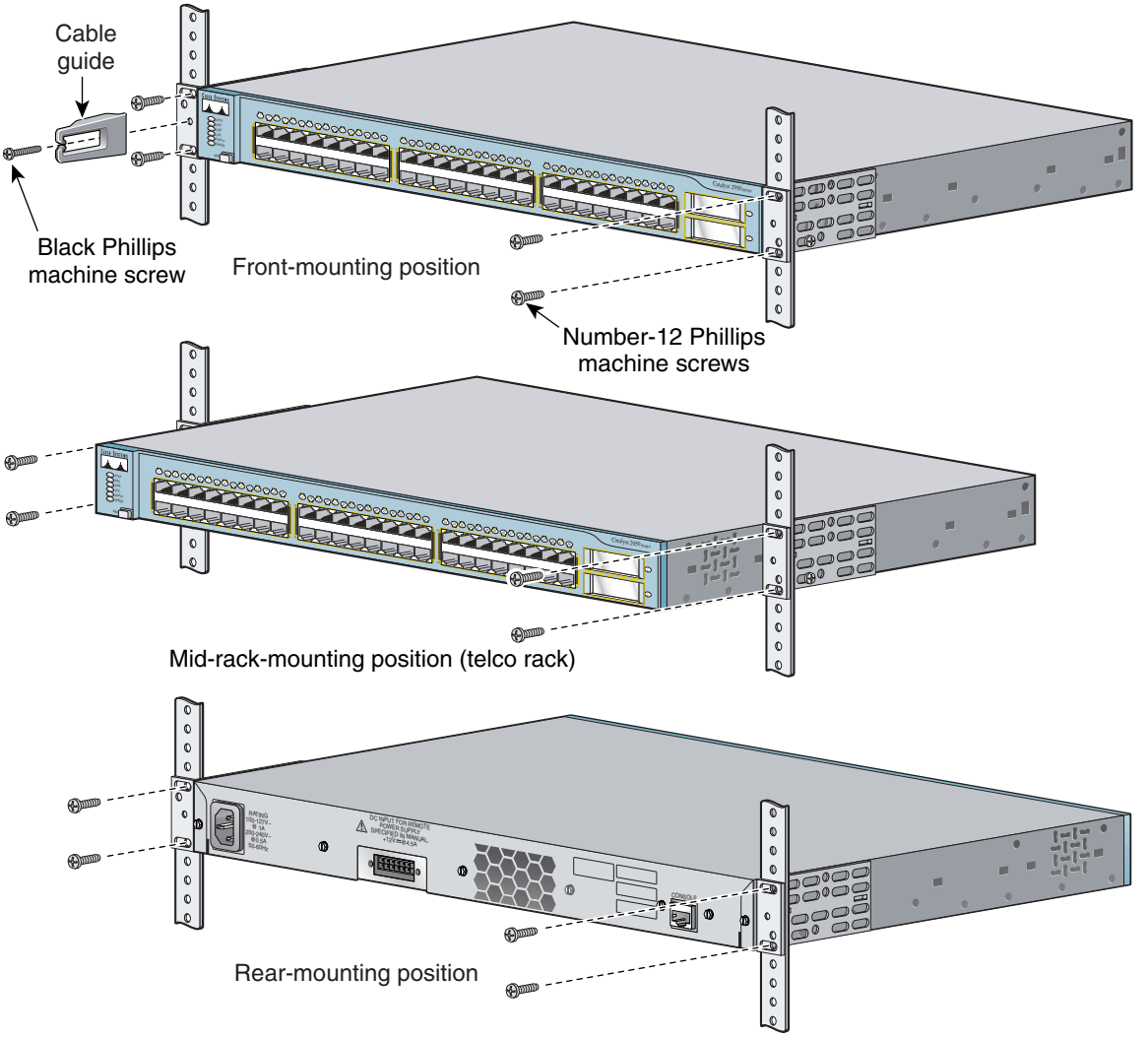
Use six Phillips flat-head screws to attach the long side of the brackets to Catalyst 2950G-48-EI, 2950SX-48-SI, or 2950T-48-SI switches in one of three mounting positions.

Use four Phillips flat-head screws to attach the long side of the brackets for all switches other than the Catalyst 2950G-48-EI, 2950SX-48-SI, or 2950T-48-SI models.



Rack-Mount the Switch

Use the black Phillips machine screw to attach the cable guide to the left or right bracket. Use the four number-12 Phillips machine screws to attach the brackets to the rack.

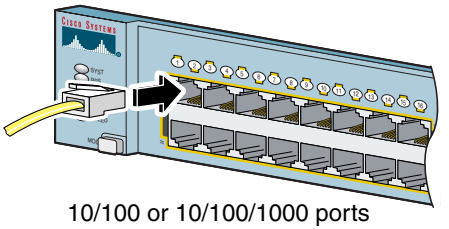


Connect to the Switch Ports

This section describes how to connect to the fixed switch ports and to the SFP and GBIC module ports.

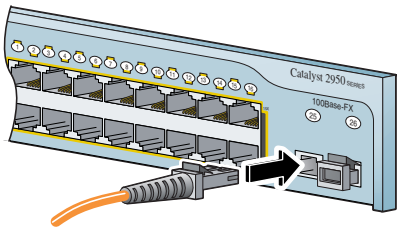
Connect to 10/100 and 10/100/1000 Ports

Follow these steps:

Step 1	When you connect to servers, workstations, IP phones, wireless access points, and routers, insert a straight-through, twisted four-pair, Category 5 cable in a switch 10/100 or 10/100/1000 port. Use a crossover, twisted four-pair, Category 5 cable when you connect to other switches, hubs, or repeaters.	 10/100 or 10/100/1000 ports
Step 2	Insert the other cable end into an RJ-45 connector on the other device.	

Connect to 100BASE-FX and 1000BASE-SX Ports

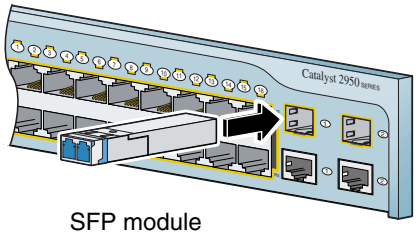
Follow these steps:

Step 1	Remove the dust plugs from the 100BASE-FX or 1000BASE-SX port and the rubber caps from the MT-RJ patch cable. Store them for future use.	 100BASE-FX or 1000BASE-SX ports
Step 2	Insert an appropriate cable into a 100BASE-FX or 1000BASE-SX port. Insert the other cable end into an SC or ST port on the other device.	

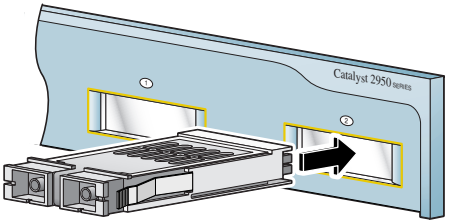
Install SFP and GBIC Modules and Connect to the Ports

Follow these steps:

Step 1 Grasp the module on the sides, and insert it into the switch slot until you feel the connector snap into place.

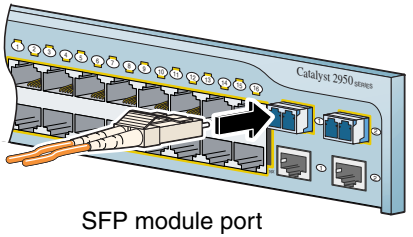


SFP module

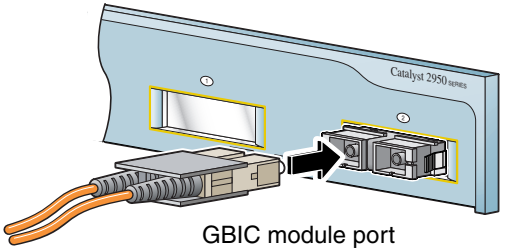


GBIC module

Step 2 Insert an appropriate cable into the module port. Insert the other cable end into the other device.



SFP module port



GBIC module port

For a list of supported modules, refer to the release notes on Cisco.com. For detailed instructions on installing and removing modules, refer to the documentation that came with the SFP or GBIC module.

Caution Removing and installing an SFP module can shorten its useful life. Do not remove and insert SFP modules more often than is absolutely necessary.

After you connect to the switch port, the port LED turns amber while the switch establishes a link. This process takes about 30 seconds, and then the LED turns green when the switch and the target device have an established link. If the LED is off, the target device might not be turned on, there might be a cable problem, or there might be a problem with the adapter installed in the target device. See the “In Case of Difficulty” section on page 19 for information about online assistance.

6 Connecting to DC Power

To connect the Catalyst 2950G-24-EI-DC or Catalyst 2950ST-24 LRE 997 switch to a DC-input power source, follow the steps in this section.

Equipment That You Supply

You need to supply these tools and equipment:

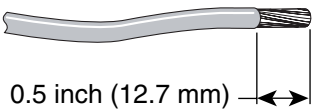
- Ratcheting Phillips-head torque screwdriver
- Panduit crimping tool
- 6-gauge copper ground wire
- Four leads of 18-gauge copper wire
- Wire stripping tool

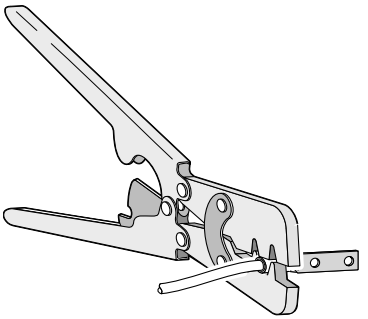
Ground the Switch

Follow these steps:

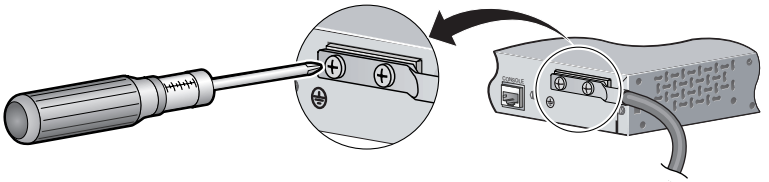
Step 1 Remove the ground lug and the two number-10-32 screws from the switch (on the rear panel of the Catalyst 2950G-24-EI-DC switch and on the front panel of the Catalyst 2950ST-24 LRE 997 switch).

Step 2 If your 6-gauge ground wire is insulated, strip it to 0.5 inch (12.7 mm).



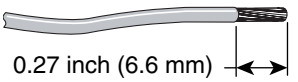
Step 3	Slide the exposed area of the 6-gauge wire into the ground lug, and use the crimping tool to crimp the lug to the wire.	

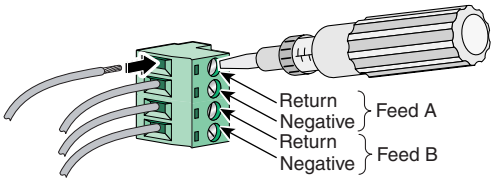
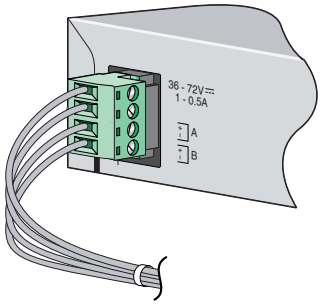
Step 4 Using the ratcheting screwdriver, torque the ground lug screws to 15 lbf-in. (240 ounce-force inches [ozf-in.]) to attach the ground lug to the switch.



Wiring the DC Input Power Source

Follow these steps:

Step 1	On the terminal block connector, identify the positive and negative feed positions.	
Step 2	Strip each of the four wires coming from the DC power source to 0.27 inch (6.6 mm) ± 0.02 inch (0.5 mm). Do not strip more than the recommended amount of wire.	
Step 3	Insert the four exposed wires from the DC-input power source into the terminal block plug, matching positive to positive and negative to negative for both the A and the B feed wires.	

Step 4	Using the ratcheting torque screwdriver, torque each terminal block captive screw (above the installed wire leads) to 4.5 lbf-in. (72 ozf-in.).	
Step 5	Insert the terminal block plug in the terminal block header on the rear panel of the Catalyst 2950G-24-EI-DC switch or on the front panel of the Catalyst 2950ST-24 LRE 997 switch.	
Step 6	Move the circuit-breaker handle for the DC power source to the on position.	

Caution You must connect the Catalyst 2950G-24-EI-DC or Catalyst 2950ST-24 LRE 997 switch only to a DC-input power source that has an input supply voltage from –36 to –72 VDC. If the supply voltage is not in this range, the switch might not operate properly or might be damaged.

7 In Case of Difficulty

If you experience difficulty, help is available here and on Cisco.com. This section includes Express Setup troubleshooting, how to reset the switch, how to access help online, and where to find more information.

Troubleshooting Express Setup

If Express Setup does not run, or if the Express Setup page does not appear in your browser:

• Did you verify that POST successfully ran before starting Express Setup?	If not, make sure that only the SYST and STAT LEDs are green before pressing the Mode button to enter the Express Setup mode.
• Did you press the Mode button while the switch was still running POST?	If yes, wait until POST completes. Power cycle the switch. Wait until POST completes. Confirm that the SYST and STAT LEDs are green. Press the Mode button to enter Express Setup mode.
• Did you try to continue without confirming that the switch was in Express Setup mode?	Verify that all LEDs above the Mode button are green. (The RPS LED is off.) If necessary, press the Mode button to enter Express Setup mode.
• Does your PC have a static IP address?	If yes, before connecting to the switch, change your PC settings to temporarily use DHCP.
• Did you connect a crossover cable instead of a straight-through Ethernet cable between a switch port and the Ethernet port of the PC?	If yes, connect a straight-through cable to an Ethernet port on the switch and the PC. Wait 30 seconds before entering **10.0.0.1** in the browser.
• Did you connect the Ethernet cable to the console port instead of to a 10/100 or 10/100/1000 Ethernet port on the switch?	If yes, disconnect from the console port. Connect to an Ethernet port on the switch and the PC. Wait 30 seconds before entering **10.0.0.1** in the browser.

• Did you wait 30 seconds after connecting the switch and the PC before entering the IP address in your browser?	If not, wait 30 seconds, re-enter **10.0.0.1** in the browser, and press **Enter**.
• Did you enter the wrong address in the browser, or is there an error message?	If yes, re-enter **10.0.0.1** in the browser, and press **Enter**.

Resetting the Switch

This section describes how to reset the switch by rerunning Express Setup. These are reasons why you might want to reset the switch:

- You installed the switch in your network and cannot connect to it because you assigned the wrong IP address.
- You want to clear all configuration from the switch and assign a new IP address.
- You are trying to enter Express Setup mode and the switch LEDs start blinking when you press the Mode button (which means that the switch is already configured with IP information).

⚠

Caution Resetting the switch deletes the configuration and reboots the switch.

To reset the switch:

- Press and hold the Mode button. The switch LEDs begin blinking after about 2 seconds. Continue holding down the Mode button. The LEDs stop blinking after 8 more seconds, and then the switch reboots.

The switch now behaves like an unconfigured switch. You can enter the switch IP information by using Express Setup as described in the "Running Express Setup" section on page 4.

Accessing Help Online

First look for a solution to your problem in the troubleshooting section of the *Catalyst 2950 Hardware Installation Guide* or the *Catalyst 2950 and Catalyst 2955 Software Configuration Guide* on Cisco.com. You can also access the Cisco Technical Support and Documentation website for a list of known hardware problems and extensive troubleshooting documentation, including:

- Factory defaults and password recovery
- Recovery from corrupted or missing software
- Switch port problems

- Network interface cards
- Troubleshooting tools
- Field notices and security advisories

Follow these steps:

1. Open your browser, and go to http://www.cisco.com/.
2. Click **Technical Support > Product Support**.
3. Click **Switches and Hubs > Catalyst 2950 Series Switches > Troubleshooting.**
4. Click the subject that addresses the problem that you are experiencing.

For More Information

For more information about the switch, refer to these documents on Cisco.com:

- *Catalyst 2950 Switch Hardware Installation Guide* (order number DOC-7811157=). This guide provides complete hardware descriptions and detailed installation procedures.
- *Regulatory Compliance and Safety Information for the Catalyst 2950 Switch* (order number DOC-7816625). This guide contains agency approvals, compliance information, and translated warning statements.
- *Catalyst 2950 and Catalyst 2955 Switch Software Configuration Guide* (order number DOC-7811380=). This guide provides a product overview and detailed descriptions and procedures of the switch software features.
- *Catalyst 2950 and Catalyst 2955 Switch Command Reference* (order number DOC-7811381=). This reference provides detailed descriptions of the Cisco IOS commands specifically created or modified for the switch.
- *Catalyst 2950 and Catalyst 2955 Switch System Message Guide* (order number DOC-7814233=). This guide provides descriptions of the system messages specifically created or modified for the switch.

8 Obtaining Documentation

Cisco documentation and additional literature are available on Cisco.com. Cisco also provides several ways to obtain technical assistance and other technical resources. These sections explain how to obtain technical information from Cisco Systems.

Cisco.com

You can access the most current Cisco documentation at this URL:

http://www.cisco.com/univercd/home/home.htm

You can access the Cisco website at this URL:

http://www.cisco.com

You can access international Cisco websites at this URL:

http://www.cisco.com/public/countries_languages.shtml

Ordering Documentation

You can find instructions for ordering documentation at this URL:

http://www.cisco.com/univercd/cc/td/doc/es_inpck/pdi.htm

You can order Cisco documentation in these ways:

- Registered Cisco.com users (Cisco direct customers) can order Cisco product documentation from the Ordering tool:

  http://www.cisco.com/en/US/partner/ordering/index.shtml

- Nonregistered Cisco.com users can order documentation through a local account representative by calling Cisco Systems Corporate Headquarters (California, USA) at 408 526-7208 or, elsewhere in North America, by calling 800 553-NETS (6387).

Documentation Feedback

You can send comments about technical documentation to bug-doc@cisco.com.

You can submit comments by using the response card (if present) behind the front cover of your document or by writing to the following address:

Cisco Systems
Attn: Customer Document Ordering
170 West Tasman Drive
San Jose, CA 95134-9883

We appreciate your comments.

9 Obtaining Technical Assistance

For all customers, partners, resellers, and distributors who hold valid Cisco service contracts, Cisco Technical Support provides 24-hour-a-day, award-winning technical assistance. The Cisco Technical Support Website on Cisco.com features extensive online support resources. In addition, Cisco Technical Assistance Center (TAC) engineers provide telephone support. If you do not hold a valid Cisco service contract, contact your reseller.

Cisco Technical Support Website

The Cisco Technical Support Website provides online documents and tools for troubleshooting and resolving technical issues with Cisco products and technologies. The website is available 24 hours a day, 365 days a year at this URL:

http://www.cisco.com/techsupport

Access to all tools on the Cisco Technical Support Website requires a Cisco.com user ID and password. If you have a valid service contract but do not have a user ID or password, you can register at this URL:

http://tools.cisco.com/RPF/register/register.do

Submitting a Service Request

Using the online TAC Service Request Tool is the fastest way to open S3 and S4 service requests. (S3 and S4 service requests are those in which your network is minimally impaired or for which you require product information.) After you describe your situation, the TAC Service Request Tool automatically provides recommended solutions. If your issue is not resolved using the recommended resources, your service request will be assigned to a Cisco TAC engineer. The TAC Service Request Tool is located at this URL:

http://www.cisco.com/techsupport/servicerequest

For S1 or S2 service requests or if you do not have Internet access, contact the Cisco TAC by telephone. (S1 or S2 service requests are those in which your production network is down or severely degraded.) Cisco TAC engineers are assigned immediately to S1 and S2 service requests to help keep your business operations running smoothly.

To open a service request by telephone, use one of the following numbers:

Asia-Pacific: +61 2 8446 7411 (Australia: 1 800 805 227)
EMEA: +32 2 704 55 55
USA: 1 800 553 2447

For a complete list of Cisco TAC contacts, go to this URL:

http://www.cisco.com/techsupport/contacts

Definitions of Service Request Severity

To ensure that all service requests are reported in a standard format, Cisco has established severity definitions.

Severity 1 (S1)—Your network is "down," or there is a critical impact to your business operations. You and Cisco will commit all necessary resources around the clock to resolve the situation.

Severity 2 (S2)—Operation of an existing network is severely degraded, or significant aspects of your business operation are negatively affected by inadequate performance of Cisco products. You and Cisco will commit full-time resources during normal business hours to resolve the situation.

Severity 3 (S3)—Operational performance of your network is impaired, but most business operations remain functional. You and Cisco will commit resources during normal business hours to restore service to satisfactory levels.

Severity 4 (S4)—You require information or assistance with Cisco product capabilities, installation, or configuration. There is little or no effect on your business operations.

Obtaining Additional Publications and Information

Information about Cisco products, technologies, and network solutions is available from various online and printed sources.

- Cisco Marketplace provides a variety of Cisco books, reference guides, and logo merchandise. Visit Cisco Marketplace, the company store, at this URL:

  http://www.cisco.com/go/marketplace/

- The Cisco *Product Catalog* describes the networking products offered by Cisco Systems, as well as ordering and customer support services. Access the Cisco Product Catalog at this URL:

  http://cisco.com/univercd/cc/td/doc/pcat/

- *Cisco Press* publishes a wide range of general networking, training and certification titles. Both new and experienced users will benefit from these publications. For current Cisco Press titles and other information, go to Cisco Press at this URL:

  http://www.ciscopress.com

- *Packet* magazine is the Cisco Systems technical user magazine for maximizing Internet and networking investments. Each quarter, Packet delivers coverage of the latest industry trends, technology breakthroughs, and Cisco products and solutions, as well as network deployment and troubleshooting tips, configuration examples, customer case studies, certification and training information, and links to scores of in-depth online resources. You can access Packet magazine at this URL:

  http://www.cisco.com/packet

- *iQ Magazine* is the quarterly publication from Cisco Systems designed to help growing companies learn how they can use technology to increase revenue, streamline their business, and expand services. The publication identifies the challenges facing these companies and the technologies to help solve them, using real-world case studies and business strategies to help readers make sound technology investment decisions. You can access iQ Magazine at this URL:

  http://www.cisco.com/go/iqmagazine

- *Internet Protocol Journal* is a quarterly journal published by Cisco Systems for engineering professionals involved in designing, developing, and operating public and private internets and intranets. You can access the Internet Protocol Journal at this URL:

  http://www.cisco.com/ipj

- World-class networking training is available from Cisco. You can view current offerings at this URL:

  http://www.cisco.com/en/US/learning/index.html

10 Cisco Limited Lifetime Hardware Warranty Terms

There are special terms applicable to your hardware warranty and various services that you can use during the warranty period. Your formal Warranty Statement, including the warranties and license agreements applicable to Cisco software, is available on Cisco.com. Follow these steps to access and download the *Cisco Information Packet* and your warranty and license agreements from Cisco.com.

1. Launch your browser, and go to this URL:

   http://www.cisco.com/univercd/cc/td/doc/es_inpck/cetrans.htm

   The Warranties and License Agreements page appears.

2. To read the *Cisco Information Packet*, follow these steps:

   a. Click the **Information Packet Number** field, and make sure that the part number 78-5235-03A0 is highlighted.

   b. Select the language in which you would like to read the document.

   c. Click **Go**.

      The Cisco Limited Warranty and Software License page from the Information Packet appears.

   d. Read the document online, or click the **PDF** icon to download and print the document in Adobe Portable Document Format (PDF).

Note You must have Adobe Acrobat Reader to view and print PDF files. You can download the reader from Adobe's website: http://www.adobe.com.

3. To read translated and localized warranty information about your product, follow these steps:
   a. Enter this part number in the Warranty Document Number field:

      78-6310-02C0
   b. Select the language in which you would like to view the document.
   c. Click **Go**.

      The Cisco warranty page appears.
   d. Read the document online, or click the **PDF** icon to download and print the document in Adobe Portable Document Format (PDF).

You can also contact the Cisco service and support website for assistance:

http://www.cisco.com/public/Support_root.shtml.

Duration of Hardware Warranty

A Cisco product hardware warranty is supported for as long as the original end user continues to own or use the product, provided that the fan and power supply warranty is limited to five (5) years. In the event of a discontinuance of product manufacture, the Cisco warranty support is limited to five (5) years from the announcement of the discontinuance.

Replacement, Repair, or Refund Policy for Hardware

Cisco or its service center will use commercially reasonable efforts to ship a replacement part within ten (10) working days after receipt of the Return Materials Authorization (RMA) request. Actual delivery times can vary, depending on the customer location.

Cisco reserves the right to refund the purchase price as its exclusive warranty remedy.

To Receive a Return Materials Authorization (RMA) Number

Contact the company from whom you purchased the product. If you purchased the product directly from Cisco, contact your Cisco Sales and Service Representative.

Complete the information below, and keep it for reference.

Company product purchased from	
Company telephone number	
Product model number	
Product serial number	
Maintenance contract number	

Corporate Headquarters
Cisco Systems, Inc.
170 West Tasman Drive
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Fax: 408 526-4100

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www-europe.cisco.com
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Fax: 31 0 20 357 1100

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Fax: +65 6317 7799

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Printed in China PRC.
78-16521-02
DOC-7816521=